

Serial No.: 09/828,101
Filed: April 17, 2001

Examiner: T. Nguyen
Group Art Unit: 2877

REMARKS

By the present amendment, claims 1, 2, 4, 7, 19, and 28-33 have been amended. Claims 1-33 remain in the application. No new matter has been added by this amendment. Applicant respectfully requests additional consideration and review of the claims in view of the foregoing amendment and following remarks.

Rejection Under Obvious-Type Double Patenting

Claims 1-33 have been rejected under the judicially created doctrine of obvious-type double patenting as being unpatentable over claims 1-22 of U.S. Patent No. 6,246,049 to Wirthlin. This rejection is respectfully traversed. A terminal disclaimer in accordance with 37 CFR 1.321(c) is filed herewith. The filing of the terminal disclaimer is not an admission of the propriety of the rejection by the Examiner. Accordingly, it is respectfully requested that the rejection of claims 1-33 under the judicially created doctrine of obvious-type double patenting be withdrawn.

Rejection Under 35 U.S.C. §103

Claims 1-6 and 12-33 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,376,785 to Chin et al. ("Chin") or French Application No. 2,728,070 to Chenet. This rejection is respectfully traversed.

It is the Examiner's position that "Chenet or Chin does not explicitly disclose a base and a collector window" then states that it would have been obvious to provide such "since the claimed base and collector window would have been known...to reduce the environment influence." However, a "window" as used throughout the specification and claims does not necessarily refer to a clear substrate to protect the base against environmental conditions. By way of example, claim 2 defines the window as an "open gap." In an effort to clarify this feature, the claims have been amended to replace "window" with "elongate opening." Note for example the description of a "window or gap 766" (page 36, paragraph 154) with respect to FIGS. 38 and 39, as well as the description of a "window 796" (page 37, paragraph 157) with respect to FIG. 40 and its manner of construction as a substrate that takes the place of the elongate gap. It will be

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understood therefore that the term "elongate opening" may refer to either an elongate gap or a substrate operably associated with the tunnel.

Chin discloses an optical displacement sensor having, as shown in FIG. 2, an emitter light pipe 36, a receiving light pipe 42, and a plunger 24 that extends between the light pipes. The plunger 24 has a window opening 60 to allow light to travel from the emitter light pipe to the receiving light pipe. The emitter light pipe 36 has a translucent face 48 formed by roughening the surface 46 so that the light emitted by the diode 34 flows "out of the face 48 of the light pipe 36 more diffusely." See col. 5, line 67 to col. 6, line 1. The other portion 50 of the surface 46 is non-translucent in order to channel the light toward the face 48. Likewise, the surface 52 of the receiving light pipe 42 is divided into a translucent face 54 and a non-translucent portion 56. Light received through the face 54 is spread out along the face 54 and then transmitted to the phototransistor 40. The receiving light pipe 42 appears to be a solid body with the exception of a chamber 44 formed in the light pipe to receive a photodiode 40.

Chenet discloses an optical sensor that uses a light pipe in the form of a fluorescent-doped fiber optic 1 for apparently measuring angular velocity. Photodetectors 4, 5 are positioned at opposite ends of the fiber optic for measuring transmitted light while a light source is positioned for projecting light onto the fiber optic 1. The light source is apparently rotatable with respect to the fiber optic.

In contrast, claim 1 as amended sets forth that the elongate light collector comprises "a tunnel formed in the base member, a length of the tunnel intersecting the surface to form an elongate opening, such that radiant energy projected by the light source through the elongate opening is incident on the tunnel and transmitted along a length of the tunnel." Claim 29 has similar features. Neither Chin nor Chenet discloses or fairly suggests, *inter alia*, that their respective receiving light pipes 42 (Chin) and 1 (Chenet) have 1) a tunnel formed in a base member; 2) an elongate opening formed at the intersection of the base surface and the tunnel; and 3) projecting radiant energy through the elongate opening to a) be incident on the tunnel and b) transmitted along a length of the tunnel. Moreover, Chenet does not disclose the use of a tunnel in place of the fluorescent-doped fiber optic, as stated in the present specification. In particular,

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page 16, paragraph 82 states the following: "Surprisingly, it has been found that the channel 204 behaves in a similar manner as the fluorescent-doped fiber optic light collectors previously described, wherein the intensity of light at the ends of the channel vary in proportion to the amount of light incident in the channel, as well as the distance of the incident light from the ends of the channel."

The Examiner offers no basis for providing an extra window on the receiving light pipe 42 of Chin in the form of an elongate opening or substrate, especially since Chin already has a translucent face 54. Moreover, the Examiner offers no basis for providing the fluorescent-doped fiber optic of Chenet with a base member, a tunnel that intersects a surface of the base member, and an elongate opening at the intersection. Applicant respectfully submits that the Examiner's rejection of the claims over Chin or Chenet falls short of the criteria set forth in the Graham factual inquiries. Namely, the Examiner provides no basis, reasoning, or prior art teaching to support any conclusion of obviousness. It is Applicant's position that the Examiner's statement "to reduce the environment influence" is insufficient in establishing a prima facie case of obviousness. Accordingly, the Examiner's rejection of the claims under Chin or Chenet can only be based on improper hindsight reconstruction of the invention. The Examiner does not offer any prior art or evidence to show that the provision of a base and collector window would have been obvious. If the Examiner continues to stand behind this rejection, it is respectfully requested that such prior art be provided.

With respect to claims 2-4 and 31-33, the Examiner states that "it would have been obvious a [sic] design choice to modify Chin's window with different dimensions or locations for using the transducer in different environments." However, as discussed above, there is no motivation to provide Chin or Chenet with a window or elongate opening, let alone a particular sized window opening, since there is no teaching or suggestion of providing an elongate light collector in the form of a tunnel that intersects with a surface of the base member.

In addition, it is respectfully submitted that it is improper for the Examiner to summarily dismiss the particular structures set forth in claims 12-21 and 22-28 as simply being "obvious" (claims 12-21) or as being an "obvious design choice" (claims 22-28) without providing prior art to show such structures. Each of these claims sets forth additional structure relating to various

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aspects of the invention that are not taught nor fairly suggested in either Chin or Chenet. Again, it is respectfully submitted that the Examiner has failed to meet the criteria set forth in the Graham factual inquiries. Namely, the Examiner has provided no reasonable basis, reasoning, or prior art teaching modify Chin and Chenet in the manner as presently claimed to support any conclusion of obviousness.

A rejection based on 35 U.S.C. § 103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the Examiner has the initial burden of supplying the factual basis for the rejection advanced. The Examiner may not, because of doubt that the invention is patentable, resort to speculation, unfound assumption or hindsight reconstruction to supply deficiencies in the factual basis. *In re Warner*, 379 F.2d 1016-17, 154 U.S.P.Q. 173 (C.C.P.A. 1967). It is respectfully submitted that the Examiner has failed to supply a factual basis for the rejections and has relied on hindsight reconstruction of the invention, as well as ignoring limitations of the invention as set forth in claims 1-6 and 12-33.

In view of the above, it is respectfully requested that the rejection of claims 1-6 and 12-33 under 35 U.S.C. §103(a) as being unpatentable over Chin or Chenet be withdrawn.

Indicated Allowability of Claims

The Applicant is appreciative of the indicated allowability of claims 7-11 if rewritten in amended form to include the limitations of the base claim and any intervening claims. Accordingly, claim 7 has been rewritten in independent form to include the essential features of claims 1 and 6. Since claims 8-11 depend either directly or indirectly from claim 7, it is submitted that claims 7-11 are in condition for allowance.

In view of the foregoing amendment and remarks, it is submitted that claims 1-33 are in condition for allowance. Early notification of allowability is therefore respectfully requested.

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If there are any outstanding issues which the Examiner feels may be resolved by way of telephone conference, the Examiner is cordially invited to contact the undersigned to resolve these issues.

Respectfully submitted,

3/4/04
(Date)

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